

the amended Information Disclosure Statement and references be considered. Applicant does not believe that an additional fee should be required in this case. The Information Disclosure Statement was filed May 21, 2001--less than three months from the filing date of the patent application, March 15, 2001. The examiner and the applicant have equal access to the reference at issue. If the Applicant had been notified of the error in the IDS earlier, the error could have been corrected before the deadline of three months from the filing date of the patent application, or at least before the first office action was mailed on March 22, 2002.

Double Patenting

The examiner objects to claims 1-76 and 82-91 under 37 CFR §1.75 as containing numerous occurrences of substantial duplicate claims.

Claim 10 has been cancelled. The objection does not apply to the remaining claims because the claims in question have "differences in scope":

Inasmuch as a patent is supposed to be limited to only one invention or, at most, several closely related indivisible inventions, limiting an application to a single claim, or a single claim to each of the related inventions might appear to be logical as well as convenient. However, court decisions have confirmed applicant's right to restate (i.e., by plural claiming) the invention in a reasonable number of ways. Indeed, a mere difference in scope has been held to be enough.

MPEP 706.03(k).

For instance, the examiner states that claim 3 is a substantial duplicate of claim 4. Claim 3 depends from claim 1 which includes the following limitation:

a second solubilizing quantity of a mutual organic solvent selected from the group consisting of water soluble glycol ethers, water soluble amides, water soluble ketones, and water soluble alcohols selected from the group consisting of methanol, ethanol, 1-propanol, and 2-propanol, said mutual organic solvent being effective to solubilize said demulsifier and said solubilizing surfactant to produce said demulsifier composition.

In contrast, claim 4 contains the following limitation:

a second solubilizing quantity of a mutual organic solvent **consisting essentially of a material** selected from the group consisting of water soluble glycol ethers, water soluble amides, water soluble ketones, and water soluble alcohols selected from the group consisting of methanol, ethanol, 1-propanol, and 2-propanol, said mutual organic solvent being effective to solubilize said demulsifier and said solubilizing surfactant to produce said composition.

Emphasis added. The emphasized language changes the scope of claim 4 from that of any of the preceding claims.

Applicant respectfully requests that the examiner withdraw the objection to claims 1-9, 11-76, and 82-91.

Rejections Under 35 U.S.C. §102

The examiner rejects claims 1-14, 17, 21, 24, 27; 31-34, 37-39, 41, 44, 47-49, 55, 57-58, 65-74 and 77 as anticipated under 35 U.S.C. §102(b) by the Vlasblom patent (U.S. Patent No. 5,863,881). The examiner contends that "Claims 5-8 and 31-33 are included in this rejection because the brine is not a part of the claimed composition and merely defines the concentration of the components." Office action, page 5.

Response

Claims 14 has been cancelled and claim 15 and 18 have been rewritten in independent form. Claims 1, 4, 9, 21, 34, 41, and 55 have been amended.

In order to establish a case of *prima facie* anticipation, the examiner must establish that a prior art reference discloses every limitation of the claimed invention either explicitly or inherently. *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1346, 51 USPQ2d 1943, 1945 (Fed. Cir. 1999).

Applicant first notes that, pursuant to patent office policy, which requires the preamble of the claims to contain more description than merely "a composition comprising," the claims have been amended to specify "[a] demulsifier composition to prevent or resolve downhole emulsions

in aqueous solutions." The Vasblom patent is directed to "a composition useful for removing heavy oil and oil sludges from process equipment such as storage tanks, transfer piping, and pumping facilities." Vasblom patent, col. 1, ll. 6-9. The examiner has not pointed to a teaching in the Vasblom patent of the claimed demulsifier composition "to prevent or resolve downhole emulsions in aqueous solutions." For this reason, alone, the rejection for anticipation should be withdrawn.

The examiner admits that "Vasblom lacks a specific description of the alkyl group of (sic) the degree of ethoxylation of the branch alcohol ethoxylates TEKSTIM® 8741 or the use of ethylene glycol alkyl ethers." Office action, page 5. The examiner states that "[t]herefore, claims defining the narrower range of HLB, the alcohol ethoxylate as linear, the alcohol ethoxylate having defined carbon numbers/degree of ethoxylation, or the solvent as ethylene glycol alkyl ethers having not been included in this rejection."

Claims 1, 4, 9, 21, 34, 41, and 55 have been amended to include the following limitation:

a first solubilizing quantity of a non-ionic surfactant effective to solubilize said demulsifier in said aqueous solution, said non-ionic surfactant comprising an alkoxyated compound having the following general formula:



wherein

R^6 is an alkyl group having from about 8 to about 16 carbon atoms;

x is from about 2 to about 20.

The examiner has not pointed to a teaching or suggestion of the foregoing feature of the amended claims in the Vasblom patent, and therefore has not established a case of *prima facie* anticipation of the claims over the Vasblom patent. Applicant notes that new claim 106 includes a similar limitation, and all of the claims depend, either directly or indirectly, on a claim

containing either the foregoing limitation, or a limitation requiring the "non-ionic surfactant [to have] an HLB value of about 8 to about 15."

For the foregoing reasons, Applicant respectfully requests that the rejection for anticipation of Vasblom be withdrawn.

Rejection over U. S. Patent No. 5,863,881 to Juprasert

The examiner rejection claims 1-8, 65, and 66 as anticipated by U.S. Patent No. 5,863,881 to Juprasert ("the Juprasert patent").

The examiner has not pointed to any teaching in the Juprasert patent of a demulsifier composition comprising

a second solubilizing quantity of a mutual organic solvent selected from the group consisting of water soluble glycol ethers, water soluble amides, water soluble ketones, and water soluble alcohols selected from the group consisting of methanol, ethanol, 1-propanol, and 2-propanol, said mutual organic solvent being effective to solubilize said demulsifier and said solubilizing surfactant to produce said demulsifier composition.

Claim 1. The examiner certainly has not pointed to a teaching in the Juprasert patent of a demulsifier composition comprising a mutual organic solvent "**consisting essentially of a material** selected from" the foregoing materials. Claim 4. The remaining claims depend, either directly or indirectly from claim 4. New claim 106 includes a similar limitation to claim 1.

Applicant respectfully requests that the anticipation rejection over the Juprasert patent be withdrawn.

Rejections Under 35 U.S.C. § 103

-Rejection of claims over Vasblom v. TEKSTIM and Klier and Mehta

The examiner has rejected claims 15-16, 18-20, 22-23, 25-26, 28-30, 35-36, 40, 42-43, 45-46, 50-54, 56, 59-64, 75-76, and 82-91 under 35 U.S.C. §103 (a) as being unpatentable over Vasblom (U.S. Patent No. 5,863,881), in view of TEKSTIM 8741 Technical Data Sheet, Tomah

Products, Inc. ("TEKSTIM"); and Klier et al, (U.S. Patent No. 5,597,792; "the Klier patent"); and Mehta et al. (U.S. Patent No. 5,389,156; "the Mehta patent").

The examiner admits that Vasblom differs from the claims "in the particular non-ionic surfactant employed and the particular co-solvent employed in the cleaning composition." Office action, p. 6. The examiner contends that the secondary references teach or suggest the claimed surfactant and/or cosolvent on various grounds.

-Response

The examiner has the burden to establish a *prima facie* case of unpatentability of the pending claims on any grounds, including obviousness. MPEP 2142; *In re Oetiker*, 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992). If examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more, the applicant is entitled to grant of the patent. *In re Oetiker*, 24 U.S.P.Q.2d 1443; MPEP 2142.

In order to establish that the claims are *prima facie* obvious over the prior art, the examiner must point to two things in the prior art, and not in the applicant's disclosure--(1) the suggestion of the invention, and (2) the expectation of its success. *In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991). See also MPEP 2143. The examiner cannot establish *prima facie* obviousness by merely arguing that a claimed invention could be derived by modifying one cited reference to incorporate something not taught or suggested by the reference, itself, or by another cited reference. In order to establish *prima facie* obviousness, the examiner has the burden to point to a teaching or suggestion in the **references themselves** that it would be desirable to make such a modification. MPEP 2143.01; *In re Brouwer*, 37 U.S.P.Q.2d 1663, 1666 (Fed. Cir. 1995).

Applicant initially notes that the present application is directed to "a demulsifier composition to prevent or resolve downhole emulsions in aqueous solutions." In contrast, the

Vasblom patent is directed to "a composition useful for removing heavy oil and oil sludges from process equipment such as storage tanks, transfer piping, and pumping facilities." Vasblom patent, col. 1, ll. 6-9. The examiner has not pointed to any teaching or suggestion in the Vasblom patent, or elsewhere, that would motivate a person of ordinary skill in the art to use the compositions described in the Vasblom patent as "a demulsifier composition to prevent or resolve downhole emulsions in aqueous solutions," as claimed.

The obviousness rejections over the Vasblom patent fail to consider the invention as a whole. MPEP 2141.02. The examiner has failed to point to any teaching in the Vasblom patent which:

- (a) indicates that the author(s) were in any way concerned with the problem of preventing or resolving downhole emulsions in aqueous solutions;
- (b) suggests that the author(s) even recognized that such a problem existed; or
- (c) teaches or suggests any solution for eliminating the problem.

A similar situation was presented to the Court of Customs and Patent Appeals in *In re Tanczyn*, 97 U.S.P.Q. 150, 152 (C.C.P.A. 1953). The claims at issue in *Tanczyn* were directed to stainless steel products which were substantially free from surface imperfections. In reversing a rejection of the claims, the C.C.P.A. noted that:

neither of the references indicates that its author was in any way concerned with the problem of surface defects in wrought and polished straight chromium stainless steel products. Not only does neither reference in any way suggest any solution for eliminating such defects, but neither indicates that the author even recognized that such a problem existed, or that he attempted to trace its source.

Id.

The examiner points to the teaching in Vasblom that "[a] branched alcohol ethoxylate according to the present invention is available from Tomah Products, Inc. of Milton, Wis., under the trade designation "TEKSTIM 8741." The examiner admits that "Vasblom lacks a specific

description of the alkyl group of (sic) the degree of ethoxylation of the branch (sic) alcohol ethoxylates TEKSTIM® 8741 or the use of ethylene glycol alkyl ethers.” Office action, page 5. The examiner then refers to the TEKSTIM data sheet and attempts to calculate backwards from the notation “Net Weight 460,” to result in the claimed features. The examiner reasons that

A molecular weight of 460 correspond to the following approximate degree of ethoxylation based on a alcohol carbon number of C10 would be about 7, C12 would be about 6.5, C14 would be about 6, C16 would be about 5.

Applicant telephoned Tomah Products Inc. to confirm that **“Net Weight 460” on the Tomah Products Product Information sheet refers to the net weight of the product in the drum. The examiner has not pointed to any teaching or suggestion that “460” relates to the molecular weight of any particular component of the TEKSTIM product in the drum.** In fact, the TEKSTIM data sheet states that “Tekstim 8741 is a **blended nonionic surfactant** used as a ‘self-emulsifying detergent.’” Even if “460” somehow could be correlated back to the molecular weight of material in the drum, which Applicant denies, the examiner has not pointed to any teaching that “net weight 460” applies solely to ethoxylated alcohols in the “blended nonionic surfactant”

The examiner’s calculations are an attempt to establish that Vasblom inherently teaches the claimed compositions. The Federal Circuit recently reversed a finding of inherency by the PTO Board of Appeals, holding that “[t]o establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be recognized by persons of ordinary skill.’” [Citations omitted.] *In re Robertson*, 49 U.S.P.Q.2d 1949, 1951 (Fed. Cir. 1999). The Federal Circuit chastised that “a retrospective view of inherency is not a substitute for some teaching or suggestion supporting an obviousness rejection.” *In re Rijckaert*, 9 F.3d 1531, 1533-34, 28 U.S.P.Q.2d 1955, 1957 (Fed.

Cir. 1998). See also **MPEP 2112**: "In relying upon a the theory of inherency, **the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.**" The examiner's has not supplied the required basis in fact and/or technical reasoning.

The Klier patent does not fill the gaps left by the Vasblom patent and the TEKSTIM data sheet. The Klier patent is related to "oil continuous microemulsions [which] are especially suitable to function as cleaning compositions to remove oil or grease." Klier, col. 1, ll. 34-35. Even if the ethoxylated alcohols in the Klier patent do meet the limitations of the claims, which Applicant does not admit, the examiner has not pointed to any teaching in the references to substitute Klier's ethoxylated alcohols for Vasblom's TEKSTIM 8741 for any purpose, much less to formulate the claimed "demulsifier composition to prevent or resolve downhole emulsions in aqueous solutions."

The Mehta patent similarly does not fill the gaps left by the Vasblom patent and the TEKSTIM data sheet. First of all, as the examiner admits that, "Mehta is directed to compositions for decontaminating hydrocarbon process equipment such as those handling crude oil." Office action, page 7. Even if ethoxylated alcohols in the Mehta patent did meet the limitations of the claims, which Applicant does not admit, the examiner has not pointed to any teaching in the references to substitute Mehta's ethoxylated alcohols for Vasblom's TEKSTIM for any purpose, much less to formulate the claimed "demulsifier composition to prevent or resolve downhole emulsions in aqueous solutions."

Finally, applicant draws the examiner's attention to the fact that the claims are combination claims. The examiner clearly has not pointed to a teaching in the cited references

that would result in the combination of new claim 106, which is directed to "[a] brine comprising a fluid selected from the group consisting of a drilling fluid, a workover fluid, and a completion fluid."

Rejection of claims 9-64, 67-77, and 82-91 over Juprasert v. Mokadam

The examiner rejects claims 9-64, 67-77, and 82-91 as obvious over Juprasert v. U.S. patent No. 6,797,456 to Mokadam ("the Mokadam patent").

Response

The Juprasert patent gives a large selection of possible combinations, but gives no indication of which of many possible choices is likely to be successful. In such a situation, even if the claimed combination did fall within the scope of possible combinations taught by the Juprasert patent, the claimed combination would not be unpatentably obvious over the Juprasert patent. *In re Geiger*, 2 U.S.P.Q.2d 1276, 1278 (Fed. Cir. 1987).

As an example, claim 9 is directed to a demulsifier composition requiring a particular combination of ingredients, including:

- (a) a demulsifying amount of an ionic surfactant having the following general formula:

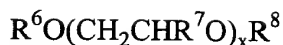


wherein

R^1 , R^2 , R^3 and R^4 independently are selected from the group consisting of hydrogen and straight chain or branched alkyl groups having from about 1 to about 20 carbon atoms, and heterogeneous and substituted forms thereof comprising one or more atoms selected from the group consisting of oxygen, sulfur, and nitrogen; and

R^5 is selected from the group consisting of alkyl groups, aryl groups, aralkyl groups and alkaryl groups wherein the alkyl portions of any of these groups have from about 1 to about 20 carbon atoms;

- (b) a first solubilizing quantity of a non-ionic surfactant effective to solubilize said demulsifier in said aqueous solution, said non-ionic surfactant comprising an alkoxyated compound having the following general formula:



wherein

R^6 is an alkyl group having from about 8 to about 16 carbon atoms;

x is from about 2 to about 20; and

- (c) a second solubilizing quantity of a mutual organic solvent effective to solubilize said demulsifier and said solubilizing surfactant to produce said composition.

Juprasert gives a large variety of possible components for (a); a large variety of possible components for (b), and a large variety of possible components for (c). For example, Juprasert teaches that "[p]referred demulsifying agents include nonionic and anionic surfactants." **The examiner has not pointed to any teaching or suggestion in the Juprasert patent that would motivate a person of ordinary skill in the art to select anionic surfactants as opposed to non-ionic surfactants, as required by the claims.**

Nor has the examiner pointed to a teaching or suggestion that one should select (a) an anionic surfactant **and combine that anionic surfactant with the particular alkoxyated compound (b)**. The examiner certainly has not pointed to a teaching or suggestion to make both of the selections required by (a) and (b) in claim 63 and further to combine (a) and (b) with ethylene glycol monobutyl ether (EGMBE) or ethylene glycol monomethyl ether (EGMME).

Contrary to the examiner's contention, column 11, line 59-col. 12, line 6 does not provide the necessary motivation because that section discusses a "solvent pre-treatment" suitable for use prior to using the wellbore treatment described in the specification:

[T]he wellbore treatment concentration or composition may be used by itself or in combination with other treatment fluids. For example, a well which has asphaltic or waxy deposits in the wellbore or near the wellbore region might require **a solvent pre-treatment** to remove such deposits **prior to using the wellbore treatment** fluid for defoaming and demulsifying. . . . The **solvent treatment** could also be a formulated solvent containing oil soluble or oil dispersible nonionic or anionic surfactants or both, polar solvents such as alcohols, glycols, ethers, esters, ketones, glycol ethers, and mixed

hydrocarbon solvents containing aliphatic alicyclic, cycloaromatic, aromatic, or polynuclear aromatic compounds.

Juprasert, col. 11, l. 59-col. 12, l. 6 (emphasis added).

The examiner has pointed to no teaching in the Juprasert patent of which parameters are critical and has pointed to no direction in the Juprasert patent as to which of many possible choices is likely to be successful. To the extent that such teachings are found in the Juprasert patent, those teachings would motivate a person of ordinary skill in the art to use the "preferred formulations" at col. 9, ll. 19-55. The examiner has not established that the claims read on these preferred formulations.

The Mokadam patent does provide the missing teaching or suggestion that would motivate a person of ordinary skill in the art to make the selections required for (a), (b), and (c) and to combine these components in the manner required by the claims. The examiner has not pointed to any teaching or suggestion in the Mokadam patent of the identity of the "non-ionic surfactant" and/or the "dispersant" taught in col. 4 much less to a teaching or suggestion that would motivate a person of ordinary skill in the art to select the claimed alkoxyated compound (claim 9) or alcohol ethoxylate (claim 63) as the non-ionic surfactant. The examiner certainly has not pointed to a teaching or suggestion that would motivate a person of ordinary skill in the art to combine (a) and (b) with claim 63's (c) ethylene glycol monobutyl ether (EGMBE) or ethylene glycol monomethyl ether (EGMME).

The examiner has not established that the combination of claim 63, and similar claims, even falls within the scope of the teachings of Juprasert and/or Mokadam. With respect to the other rejected claims, even if the claimed combination fell within the scope of possible combinations taught by the Juprasert patent and/or the Mokadam patent, which Applicant does not admit, that fact would not render the claimed combination unpatentably obvious. *In re*

Geiger, 2 U.S.P.Q.2d 1276, 1278 (Fed. Cir. 1987). A person of ordinary skill could combine these teachings to result in innumerable combinations. The odds of a person of ordinary skill in the art choosing the claimed combination are minute. Neither the Juprasert patent nor the Mokadam patent shows a particular preference for the claimed combination.

New Claims 106-143

Claim 77 has been cancelled and new claims 106-143 have been added. New claims 106-143 clarify that the claims are directed to a "brine comprising a fluid selected from the group consisting of a drilling fluid, a workover fluid, and a completion fluid." The examiner has not pointed to a teaching in any reference that anticipates or renders these claims obvious.

CONCLUSION

For the foregoing reasons, Applicant respectfully requests that the rejections be withdrawn and that all of the pending claims be allowed. The commissioner is hereby authorized to charge any unpaid fees or to credit any overpayment of fees in connection with this paper to Deposit Account No. 02-0429, maintained by Baker Hughes Incorporated.

Respectfully submitted,



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РСТ

ВСЕМИРНАЯ ОРГАНИЗАЦИЯ
ИНТЕЛЛЕКТУАЛЬНОЙ СОБСТВЕННОСТИ
Международное бюро



МЕЖДУНАРОДНАЯ ЗАЯВКА, ОПУБЛИКОВАННАЯ В СООТВЕТСТВИИ
С ДОГОВОРом О ПАТЕНТНОЙ КООПЕРАЦИИ (РСТ)

<p>(51) Международная классификация изобретения⁶: E21B 43/22, 43/32</p>	<p>A1</p>	<p>(11) Номер международной публикации: WO 00/09856 (43) Дата международной публикации: 24 февраля 2000 (24.02.00)</p>
<p>(21) Номер международной заявки: РСТ/RU98/00419 (22) Дата международной подачи: 21 декабря 1998 (21.12.98) (30) Данные о приоритете: 98115677 10 августа 1998 (10.08.98) RU (71)(72) Заявители и изобретатели: ПОЗДНЫШЕВ Геннадий Николаевич [RU/RU]; 443001 Самара, ул. Галактионовская, д. 187, кв. 66 (RU) [POZDNY-SHEV, Gennady Nikolaevich, Samara (RU)]. МАНЬ-РИН Вячеслав Николаевич [RU/RU]; 626481 Тю-менская обл., Когалым, ул. Ленинградская, д. 65, кв. 24 (RU) [MANYRIN, Vyacheslav Nikolaevich, Koga-lym (RU)]. ДОСОВ Александр Николаевич [RU/RU]; 626481 Тюменская обл., Когалым, ул. Ленинград-ская, д. 7, кв. 227 (RU) [DOSOV, Alexandr Nikola-ovich, Kogalym (RU)]. САВЕЛЬЕВ Александр Геор-гиевич [RU/RU]; 443002 Самара, пр. Ленина, д. 26, кв. 86 (RU) [SAVELIEV, Alexandr Georgievich, Sa-mara (RU)]. МАНЬРИН Валерий Николаевич [RU /RU]; 626481 Тюменская обл., Когалым, ул. Мира, д. 27, кв. 31 (RU) [MANYRIN, Valery Nikolaevich, Ko-</p>		<p>galym (RU)]. ПУЗЕНКО Владимир Иванович [RU/RU]; 626481 Тюменская обл., Когалым, ул. Ми-ра, д. 18а, кв. 36 (RU) [PUZENKO, Vladimir Ivano- vich, Kogalym (RU)]. (81) Общий представитель: ПОЗДНЫШЕВ Геннадий Николаевич; 443001 Самара, ул. Галактионовская, д. 187, кв. 66 (RU) [POZDNYSHIEV, Gennady Niko- laevich, Samara (RU)]. (81) Указанные государства: CA, CN, KP, KR, KZ, VN. Опубликована С отчётом о международном поиске.</p>
<p>(54) Title: CRUDE-OIL EXTRACTION METHOD (54) Название изобретения: СПОСОБ ДОБЫЧИ НЕФТИ (57) Abstract The present invention pertains to the crude-oil extraction industry and essentially relates to methods for extracting crude oil from non-uniform geological formations by carrying out isolation operations in order to level-off the injectivity profile of injection wells and to reduce the water ingress into production wells. This method involves injecting into the formation aqueous solutions of at least two gel- or deposit-forming agents in the form of an aggregative and stable reverse-type emulsion in a low-viscosity hydrocarbon solvent (petrol, kerosene, etc.). The method also involves previously dissolving in said solvent from 5 to 20 wt.% of a concentrate of porphyric and asphalt-tar components from crude-oil. For each aqueous solution of the agent used, the method involves preparing previously and separately 50 vol. % of the aggregative and stable reverse-type emulsion in which the size of the particles (globules in the emulsified aqueous solution of the agent) is commensurate with the dimensions of the pores in the highly permissive sections of the formation. Before being injected into the formation, the previously prepared emulsions of gel- or deposit-forming agents are mixed according to various volumetric proportions. Once the mixed emulsion is injected, the method involves injecting into the formation a hydrocarbon solution of a demulsifier for the reverse emulsion in order to break down the same and to form in the highly permissive sections of the formation a water-isolation barrier that consists of a viscous and resilient gel (or a non-soluble deposit).</p>		

Attached to
paper #9

INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

ATTY. DOCKET NO.

194-26331-US

SERIAL NO.

09 / 809,529

APPLICANT

Spalding, William A.

FILING DATE

03/15/01

GROUP

1712

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	BA	5,102,580	4/7/92	Toenjes et al.			
	BB	5,543,387	8/6/96	Mokadam, et al.			
	BC	5,643,460	7/1/97	Marble et al.			
	BD	5,730,905	3/24/98	Hart et al.			
	BE	5,762,149	6/9/98	Donovan et al.			
	BF	5,797,456	8/25/98	Mokadam			
	BG	5,885,424	3/23/99	Davis et al.			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	PUBL. DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	BH							
	BI							
	BJ							

OTHER DISCLOSURES

	BK	"Crude-Oil Extraction Method", The International Bureau of WIPO Publication Number WO 00/09856; Publication Date: February 24, 2000; Country: Russia; abstract only.						
	BL							
	BM							

EXAMINER

Daniel S. Melz

DATE CONSIDERED

1-13-03

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next comment to applicant

AMENDED SHEET

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
Spalding, W. A.

Serial No.: 09/809,529

Filed: March 15, 2001

For: Demulsifier for Aqueous
Completion Fluids

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Group Art Unit: 1712

Examiner: Metzmaier, D.S.

Atty. Docket: 194-26331-US

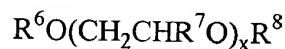
MARKED UP COPY OF CHANGES ACCOMPANYING
RESPONSE TO SECOND OFFICE ACTION

Assistant Commissioner for Patents
Washington, D.C. 20231
Box Response

In the Claims

1. (Amended) A demulsifier composition to prevent or resolve downhole emulsions in aqueous solutions, said demulsifier composition comprising:

a demulsifying amount of an ionic surfactant [an emulsifier] effective to perform a function selected from the group consisting of demulsifying an emulsion in an aqueous solution and preventing formation of an emulsion in an aqueous solution; [a first solubilizing quantity of a solubilizing surfactant effective to solubilize said demulsifier in said aqueous solution] a first solubilizing quantity of a non-ionic surfactant effective to solubilize said demulsifier in said aqueous solution, said non-ionic surfactant comprising an alkoxyated compound having the following general formula:



wherein

R⁶ is an alkyl group having from about 8 to about 16 carbon atoms;

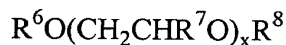
x is from about 2 to about 20; and

a second solubilizing quantity of a mutual organic solvent selected from the group consisting of water soluble glycol ethers, water soluble amides, water soluble ketones, and water soluble alcohols selected from the group consisting of methanol, ethanol, 1-propanol, and 2-propanol, said mutual organic solvent being effective to solubilize said demulsifier and said solubilizing surfactant to produce said demulsifier composition.

4. (Amended) A demulsifier composition to prevent or resolve downhole emulsions in aqueous solutions, said demulsifier composition comprising:

a demulsifying amount of an ionic surfactant effective to perform a function selected from the group consisting of demulsifying an emulsion in an aqueous solution and preventing formation of an emulsion in an aqueous solution;

[a first solubilizing quantity of a non-ionic surfactant effective to solubilize said ionic surfactant in said aqueous solution] a first solubilizing quantity of a non-ionic surfactant effective to solubilize said demulsifier in said aqueous solution, said non-ionic surfactant comprising an alkoxyated compound having the following general formula:



wherein

R⁶ is an alkyl group having from about 8 to about 16 carbon atoms;

x is from about 2 to about 20; and

a second solubilizing quantity of a mutual organic solvent consisting essentially of a material selected from the group consisting of water soluble glycol ethers, water soluble amides, water soluble ketones, and water soluble alcohols selected from the group consisting of methanol, ethanol, 1-propanol, and 2-propanol, said mutual organic solvent being effective to solubilize said demulsifier and said solubilizing surfactant to produce said composition.

9. (Amended) A demulsifier composition to prevent or resolve downhole emulsions in aqueous solutions, said demulsifier composition comprising:

a demulsifying amount of an ionic surfactant having the following general formula:

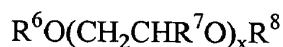


wherein

R^1 , R^2 , R^3 and R^4 independently are selected from the group consisting of hydrogen and straight chain or branched alkyl groups having from about 1 to about 20 carbon atoms, and heterogeneous and substituted forms thereof comprising one or more atoms selected from the group consisting of oxygen, sulfur, and nitrogen; and R^5 is selected from the group consisting of alkyl groups, aryl groups, aralkyl groups and alkaryl groups wherein the alkyl portions of any of these groups have from about 1 to about 20 carbon atoms;

[a first solubilizing quantity of a solubilizing surfactant effective to solubilize said ionic surfactant in said aqueous solution] a first solubilizing quantity of a non-ionic surfactant effective to solubilize said demulsifier in said aqueous solution, said

non-ionic surfactant comprising an alkoxyated compound having the following general formula:



wherein

R⁶ is an alkyl group having from about 8 to about 16 carbon atoms;

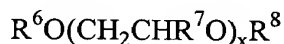
x is from about 2 to about 20; and

a second solubilizing quantity of a mutual organic solvent effective to solubilize said demulsifier and said solubilizing surfactant to produce said composition.

15. (Amended) [The composition of claim 14 wherein] A demulsifier composition to prevent or resolve downhole emulsions in aqueous solutions, said demulsifier composition comprising:

a demulsifying amount of a demulsifier effective to perform a function selected from the group consisting of demulsifying an emulsion in an aqueous solution and preventing formation of an emulsion in an aqueous solution;

a first solubilizing quantity of a non-ionic surfactant effective to solubilize said demulsifier in said aqueous solution, said non-ionic surfactant comprising an alkoxyated compound having the following general formula:



wherein

R⁶ is an alkyl group having from about 8 to about 16 carbon atoms; [and,]

x is from about 2 to about 20; and

a second solubilizing quantity of a mutual organic solvent effective to solubilize said demulsifier and said solubilizing surfactant to produce said composition.

18. (Amended) [The composition of claim wherein said non-ionic surfactant has a] A demulsifier composition to prevent or resolve downhole emulsions in aqueous solutions, said demulsifier composition comprising:

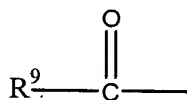
a demulsifying amount of a demulsifier effective to perform a function selected from the group consisting of demulsifying an emulsion in an aqueous solution and preventing formation of an emulsion in an aqueous solution;

a first solubilizing quantity of a non-ionic surfactant having an HLB value of about 8 to about 15, said non-ionic surfactant being effective to solubilize said demulsifier in said aqueous solution, said non-ionic surfactant comprising an alkoxyated compound having the following general formula:



wherein

R⁶ independently is selected from the group consisting of hydrogen, acyl groups and alkyl groups having from about 1 to about 22 carbon atoms, said acyl groups having the following general formula:



wherein R⁹ is an alkyl group having from about 1 to about 24 carbon atoms;

R⁷ independently is selected from the group consisting of hydrogen and alkyl groups having from about 1 to about 6 carbon atoms;

R⁸ is selected from the group consisting of hydrogen and alkyl groups having from about 1 to about 6 carbon atoms;

and

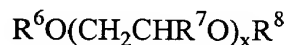
x is from about 1 to about 20; and

a second solubilizing quantity of a mutual organic solvent effective to solubilize said demulsifier and said solubilizing surfactant to produce said composition.

21. (Amended) A demulsifier composition to prevent or resolve downhole emulsions in aqueous solutions, said demulsifier composition comprising:

a demulsifying amount of a demulsifier effective to perform a function selected from the group consisting of demulsifying an emulsion in an aqueous solution and preventing formation of an emulsion in an aqueous solution;

[a first solubilizing quantity of a solubilizing surfactant effective to solubilize said ionic surfactant in said aqueous solution] a first solubilizing quantity of a non-ionic surfactant effective to solubilize said demulsifier in said aqueous solution, said non-ionic surfactant comprising an alkoxyated compound having the following general formula:



wherein

R⁶ is an alkyl group having from about 8 to about 16 carbon atoms;

x is from about 2 to about 20; and

a second solubilizing quantity of a mutual organic solvent effective to solubilize said demulsifier and said solubilizing surfactant and to produce said composition, said mutual organic solvent comprising one or more water soluble alkanol ethers having the formula



wherein

R^{10} , R^{11} and R^{12} independently are selected from the group consisting of hydrogen and alkyl groups having from about 1 to about 6 carbon atoms; and

z is from about 1 to about 22.

34. (Amended) A demulsifier composition comprising:

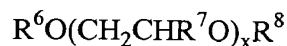
a demulsifying amount of an ionic surfactant effective to perform a function selected from the group consisting of demulsifying an emulsion in an aqueous solution and preventing formation of an emulsion in an aqueous solution, said ionic surfactant having the following general formula:



wherein

R¹, R², R³ and R⁴ independently are selected from the group consisting of hydrogen and straight chain or branched alkyl groups having from about 1 to about 20 carbon atoms, and heterogeneous and substituted forms thereof comprising one or more atoms selected from the group consisting of oxygen, sulfur, and nitrogen; and R⁵ is selected from the group consisting of alkyl groups, aryl groups, aralkyl groups and alkaryl groups wherein the alkyl portions of any of these groups have from about 1 to about 20 carbon atoms;

[a first solubilizing quantity of a non-ionic surfactant effective to solubilize said ionic surfactant in said aqueous solution] a first solubilizing quantity of a non-ionic surfactant effective to solubilize said demulsifier in said aqueous solution, said non-ionic surfactant comprising an alkoxylated compound having the following general formula:



wherein

R⁶ is an alkyl group having from about 8 to about 16 carbon atoms;

x is from about 2 to about 20; and

a second solubilizing quantity of a mutual organic solvent comprising one or more water-soluble alkanol ethers having the formula

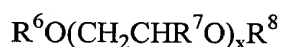


wherein

R^{10} , R^{11} and R^{12} independently are selected from the group consisting of
hydrogen and alkyl groups having from about 1 to about 6 carbon atoms;
and
z is from about 1 to about 22.

41. (Amended) A demulsifier composition to prevent or resolve downhole emulsions in aqueous solutions, said demulsifier composition comprising:

a demulsifying amount of an ionic surfactant effective to perform a function selected from the group consisting of demulsifying an emulsion in an aqueous solution and preventing formation of an emulsion in an aqueous solution;
a first solubilizing quantity of a non-ionic surfactant effective to solubilize said ionic surfactant in said aqueous solution, wherein said non-ionic surfactant is an alkoxyated compound having the following general formula:



wherein

[R^6 independently is selected from aryl groups and alkyl groups having from about 1 to about 22 carbon atoms;

R^7 is independently selected from the group consisting of hydrogen and alkyl groups having from about 1 to about 6 carbon atoms;

x is from about 1 to about 30]

R^6 is an alkyl group having from about 8 to about 16 carbon atoms;

x is from about 2 to about 20; and

a second solubilizing quantity of a mutual organic solvent for said ionic surfactant and said non-ionic surfactant.

55. (Amended) A demulsifier composition to prevent or resolve downhole emulsions in aqueous solutions, said demulsifier composition comprising:

a demulsifying amount of ionic surfactant having the following general formula:

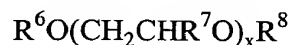


wherein

R^1 , R^2 , R^3 and R^4 independently are selected from the group consisting of hydrogen and straight chain or branched alkyl groups having from about 1 to about 20 carbon atoms, and heterogeneous and substituted forms thereof comprising one or more atoms selected from the group consisting of oxygen, sulfur, and nitrogen; and

R^5 is selected from the group consisting of alkyl groups, aryl groups, aralkyl groups and alkaryl groups wherein the alkyl portions of any of these groups have from about 1 to about 20 carbon atoms;

a first solubilizing quantity of a non-ionic surfactant effective to solubilize said demulsifier in an aqueous solution, said non-ionic surfactant comprising an alkoxyated compound having the following general formula:



wherein

R^6 independently is selected from aryl groups and alkyl groups having from about 1 to about 22 carbon atoms;

R⁷ is independently selected from the group consisting of hydrogen and alkyl groups

having from about 1 to about 6 carbon atoms; and

z is from about 1 to about 20]

R⁶ is an alkyl group having from about 8 to about 16 carbon atoms;

x is from about 2 to about 20; and

a second solubilizing quantity of a mutual organic solvent comprising one or more water soluble alkanol ethers having the formula



wherein

R¹⁰, R¹¹ and R¹² independently are selected from the group consisting of hydrogen and alkyl groups having from about 1 to about 6 carbon atoms; and preferably from 1 to about 4 carbon atoms; and

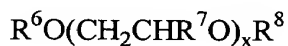
z is from about 1 to about 22.

63. (Amended) A demulsifier composition to prevent or resolve downhole emulsions in aqueous solutions, said demulsifier composition comprising:

a demulsifying amount of a 2-propanamine salt of dodecyl benzene sulfonic acid

effective to perform a function selected from the group consisting of demulsifying an emulsion in an aqueous solution and preventing formation of an emulsion in an aqueous solution;

a first solubilizing quantity of an alcohol ethoxylate having the following general formula



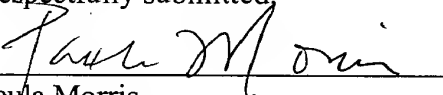
wherein

R^6 is an alkyl group having from about 8 to about 16 carbon atoms; and,

x is from about 2 to about 20; and

a second solubilizing quantity of a mutual organic solvent selected from the group consisting of ethylene glycol monobutyl ether (EGMBE) and ethylene glycol monomethyl ether (EGMME).

Respectfully submitted



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